

**ABSTRACT**

The system and method of the present invention removes organic and organometallic materials from an article in reduced pressure atmosphere containing ozone and activated oxygen. A dielectric barrier discharge lamp induces an intermolecular molecule energy transfer to the organic and organometallic material. The dielectric barrier discharge lamp emits vacuum ultraviolet rays having a wavelength of about 172 nm that produce a photochemical reaction with the oxygen-containing gas to generate ozone and the activated oxygen. The organic and organometallic material is then attached by the ozone and activated oxygen.